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Wright, George Frederick

THE NAMPA IMAGE:

CORRESPONDENCE RELATING TO ITS DISCOVERY WITH EXPLANATORY COMMENTS, ETC.

[From the PROCEEDINGS OF THE BOSTON SOCIETY OF NATURAL HISTORY, VOL. XXIV, 1889.]

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[From the PROCEEDINGS OF THE BOSTON SOCIETY OF NATURAL HISTORY, VOL. XXIV, 1889.]

GENERAL MEETING, JANUARY 1, 1890.

The President, Prof. F. W. PUTNAM, in the chair.

The President announced that the evening would be devoted to a discussion of the Climatic Condition of the Glacial Period to be considered in relation to the existence of man at that time.

He called upon Prof. G. Frederick Wright, who had obtained important information in relation to the "Nampa Image," to open the discussion.

Professor Wright read letters relating to the Nampa Image, which are given below, and spoke of the probable climatic conditions at the time of the deposition of the deposits from which the image was obtained.

THE NAMPA IMAGE.

View from front, back and side (natural size).

Professor Wright said: I can best perform my duty to the public in reference to the image found by Mr. M. A. Kurtz of Nampa, Idaho, by simply submitting the entire correspondence respecting

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it, with such connecting comments as may be necessary for explanation. The subject was first brought to my notice by the following letter from Mr. Charles Francis Adams, president of the Union Pacific Railroad.

Boston, Sept. 8, 1889.

PROFESSOR G. F. WRIGHT, Oberlin, Ohio.

MY DEAR SIR:

During a recent trip to Alaska I was greatly interested in your book on the Ice Age of America. After my return, and while the subject was still fresh in my mind, I had occasion to stop for a few hours with the party which accompanied me at Boisé City, in Idaho. While there I heard various references made to a curious clay image, evidently the work of human hands, which had recently been found while boring for artesian water.

As you are aware, this is a lava region, and the image in question was found at a depth of some three hundred and twenty feet below the surface.

The day after the image was thrown up by the borer, Mr. Cumming, the general manager of the Union Pacific lines in that district, chanced to be in Boisé City, and saw it. Mr. Cumming is a graduate of Harvard College, and a thoroughly trained man. His evidence I should take as conclusive in regard to the facts. Thinking the matter may be of interest to you, I send you the inclosed memorandum in relation to this image. It was taken down by me on the spot while examining the image, which is now in the possession of Mr. M. A. Kurtz, of Nampa, Idaho, who picked it up when thrown out of the pipe.

Yours, etc.,

CHARLES F. ADAMS.

MEMORANDUM OF IMAGE FOUND AT NAMPA, IDAHO.

Material, baked clay; size, about an inch and a half long; unmistakably made by human beings.

It was found about the first of August, 1889, at Nampa, in Ada County, Idaho, under the following circumstances:

M. A. Kurtz was engaged in boring an artesian well. The image was brought to the surface through the pipe in the usual way among some heavy, coarse sand, from a depth of three hundred and twenty feet from the surface.

The different strata which had been bored through were as follows:

Sixty feet of soil.
Twelve to fifteen feet of lava rock.
One hundred feet of quicksand.
Six inches of clay.
Forty feet of quicksand.
Six feet of clay.
Thirty feet of quicksand.
Twelve to fifteen feet of clay.
Then clay balls mixed with sand.
Then coarse sand in which the image came up.
Then vegetable soil.
Then the original sandstone.

Upon receipt of this letter, I at once requested to be put in communication with Mr. Kurtz, and upon receiving a letter from Mr. Adams introducing me to him, immediately wrote Mr. Kurtz making inquiries about the general aspect of the country, and requesting a photograph of the image. The following letter is his reply.

Nampa, Idaho Territory, Sept. 27, 1889.

Prof. G. F. Wright.

Dear Sir:

In reply to your favor of the 23rd inst. I would submit the following:

1. The elevation of Boisé City is about 2875 feet and Nampa nearly 2,500. Boisé City is on an air line twenty miles from Nampa in a northeasterly direction.

2. The nearest point to the Boisé river is seven miles. The foot hills begin from one-half to two miles from the river and it is some seventy-five miles to the top of the range.

The nearest point to the Snake river is twelve miles, the foot hills skirt the river bank. It is fifty miles to the top of the range from Nampa.

3. The valley from Boisé City due south to the Snake river is about thirty-five miles and from our place about twenty miles. From Boisé City to the junction of the Boisé and Snake rivers fifty-five miles. The valley that forms the Boisé river bottom is from two to five miles in width and its formation is a sandy gravel, is very

productive and sub-irrigates. The foot hills show some signs of lava. The first plateau is some sixty feet higher than the river, from five to eight miles in width, is a rich, sandy loam soil with strata of heavy gravel and bowlders underlying it at a depth of from ten to thirty feet. It contains several dry creeks with sandy bottoms, but which contain plenty of water at a depth of from two to four feet. These creeks rise at the foot of the mountain range more than one hundred miles east of here and flow through the second plateau.

The second plateau is some thirty feet above the first and embraces the balance of the valley. The soil same as first and extends to the lava flow which seems to be uniform at a depth of say sixty-five feet; it sometimes contains a heavy coarse sand. This plateau is much broken with hilly elevations of lava rock, which contains caves and dark subterranean passages, that are full of strong currents of air.

4. We found no evidence of bowlders anywhere. I will inclose with the image some of the pebbles taken out at different times, although we did not find any deposit of them. The large clay ball may be of some interest to you, it stuck to the bottom of the sand pump; it and many of the smaller ones were found about the same time as the image and on top of the primitive formation. We have no means here of having the image photographed so I will send it by express, hoping it will interest you. Please examine and at your earliest convenience return to me. The image was dropped and the head broken and we fastened it on as well as we could.

Any further information I can give will be cheerfully given.

Very respectfully yours,

M. A. Kurtz.

Upon receipt of this I addressed another letter to Mr. Kurtz to draw out from him such explicit statements as should enable us to determine whether or not the image might have fallen in from the top, or been thrown in by some bystander. The letter of October 11th answers these inquiries. I would add that the "clay balls" referred to which came up in the pump are larger than the image, and equally fragile. They seem as I remember them to be of the same material with the image, but were coated over with a film of oxide of iron.

Nampa, Idaho Ter., Oct. 11, 1889.

PROF. G. F. WRIGHT.

DEAR SIR:

Your letter of the fifth at hand and contents noted. In reply would say that the well is tubed with a heavy six-inch pipe from the top and any light substance thrown in would float on the water and be ground to pieces by the sand pump.

We had been getting some of the clay balls and the character of the sand was changing. I had been at the well for several days and ran the contents of the sand pump through my hand as it was pumped out. I had the clay image in my hand and supposed it was a twig. I dipped it into a barrel of water standing near, washed it off and saw at once what it was.

Mr. Duffes, a prominent citizen of our town, happened to be standing by and saw it all. The driller and helper were the only other persons present. If convenient for you, I would be glad to have a brief opinion from you as to your idea of it.

Yours, very truly,

M. A. KURTZ.

My third letter to Mr. Kurtz answered his inquiry about the possible conditions under which the image may have been buried, in which I suggested that an overflow of lava in the lower part of the Snake river may have obstructed the water so as to make a temporary lake, in the vicinity of Nampa, which was filled with sediment, perhaps from melting glaciers in the head waters of the river near Yellowstone Park, and that subsequently a lava overflow had occurred near Nampa and so sealed the whole up. I also asked more particularly about the mode of drilling the well and about the size of the pump. The letter of the twenty-first is his reply.

The image itself has been submitted to Profs. H. W. Haynes and F. W. Putnam, with what results they can answer for themselves.

Nampa, Idaho, Oct. 21, 1889.

PROF. G. F. WRIGHT.

DEAR SIR:

Your kind favor of the sixteenth just received. We did not use the drill after we went through the lava rock. With our

machinery we had a fishing tool with jars and the party drilling the well welded a piece of sharp, broad iron on the bottom of it which he used only when in the clay. The sand pump with the coupling at the top is a little over five inches in the chamber. The sand pump proper is 4½ inches on the outside and the valve is about 3½ inches on the inside. Anything put in from the top would have floated on top of the water and been ground to powder by the action of the sand pump. If there is any way to remove the implied doubt in your letter as to the genuineness of the image please inform me. You can have the affidavits of the only four persons present, any time you may think them necessary.

The obstruction noted in your comments in the lower part of the valley are not difficult to trace, and a gentleman of some scientific information and well informed as to this country made a statement to me several months ago that this wash or fill in the valley had occurred since the Spanish conquest of Mexico and that it was a matter of record.

Hoping to hear from you again, I am,

Yours very truly,

M. A. KURTZ.

In order to get information in regard to the geological horizon of the beds from which the image was taken I made inquiries of Prof. S. F. Emmons and received the following reply.

Department of the Interior,
United States Geological Survey.
Washington, D. C., Oct. 21, 1889.

PROF. G. F. WRIGHT.

DEAR SIR:

My reply to your letter of Oct. 9, asking information with regard to the geological horizon of the beds, from which the image from Nampa, Idaho, is said to have been obtained, has been delayed from day to day in the hopes that I might obtain additional information either by records or personal communications from fellow geologists that would supplement the rather meagre data which I myself possess. As I have as yet been unable to obtain any further knowledge on the subject, I must needs content myself with the surmises I was able to make during a visit of a few

days to the Boisé region, in the summer of 1887, made for the purpose of looking into the merits of a scheme for diverting the waters of the Boisé river at a point about ten miles above Boisé city, where it emerges from the Upper Boisé basin through a cañon in the basalt, so as to irrigate a triangular area of country between Boisé and Snake rivers, some fifty miles in length from the junction of these rivers southeastward, and thirty miles wide at its base or southeastern end. To the engineers of the Irrigation Company, Messrs. A. D. Foote and C. H. Tompkins, jr., I am indebted for valuable topographical data with regard to this area.

Nampa, where the boring was made from which the image is said to have been obtained, is a station on the Oregon Short Line R. R. about midway in this area and, as you state, about twelve miles north of the Snake river and seven miles south of the Boisé river. It was obtained, you tell me, from a bed of coarse sand 320 feet below the surface after passing through beds of quicksand divided by thin beds of clay and one bed of lava ten to fifteen feet thick, and below this coarse sand was found vegetable soil and then what is described as the "original sandstone."

My experience with data given by persons sinking drill holes as to the material passed through leads me to accept with considerable reserve the descriptive names they give to this material unless I have an opportunity of verifying it by personal observation, yet those given by you accord very well with the general idea I was able to form of the material underlying the Boisé region. Stream erosion has been very slight in this region, and its topographical form, characterized by a succession of broad, level terraces descending in gentle steps, shows that it is underlain by practically horizontal deposits of recent age. Owing partly to the character of the erosion and partly to the loose, crumbly nature of the beds themselves no good cliff exposures were found where I could obtain a continuous section of these beds. The important point in the section, namely, whether the definition of the lowest stratum, as vegetable soil, is well taken or not, it would have been impossible to verify, since it must be at a lower level than the beds of either the Snake or Boisé rivers at any point within the region.

I could see that the basin, in which these beds were deposited, extended for a considerable distance to the south and west, but to the north it was bounded by a mountainous country not far beyond the Boisé river. As to how far it extended eastward toward the

great lava plains of the Snake river I could form no idea, since unfortunately both eastward and westward-going trains pass over that country in the night.

On the banks of the Boisé river, just below where it emerges from the cañon I observed that the gravels, which form the first bench to the south of the river, rest on an eroded, white sandstone, which might correspond to the "original sandstone" struck at the bottom of the drill hole and form part of the bottom of the lake in which these beds were deposited; this assumes a descent of about 700 feet in twenty miles giving a rather unusual but not impossible slope to the bed of the lake, and makes it probable that the cañon of the Boisé is near the northern shore line of this lake.

I had been unable to find any fossil evidence of the age of these beds, but on other grounds had assumed that they were late Tertiary or early Quaternary. They had a younger appearance than the pliocene deposits of Nevada, and on the other hand looked older in some respects than the Quaternary deposits of Lakes Bonneville and Lahontan.

The character of the Snake river valley in this region was of special significance to me. Instead of meandering to and fro in a broad alluvial bottom with large cottonwood trees along its banks, as is usually the case with such large streams, it runs in a comparatively straight course through a slightly rolling sage bush country, filling its bed from bank to bank with a swift, deep, turbid stream, with only a scanty growth of young willows along its shores, which are being constantly undermined and carried away. This, to me, was an evidence that, at some point below this, its bed had been lowered in recent geological time by the breaking of some barrier that had formerly held it back, and that it was now rapidly cutting back and deepening its bed in an endeavor to reach a baselevel of erosion. Its slope from the base of the mountains in eastern Idaho is very rapid for so large a river. It has not been surveyed so that it cannot be accurately determined, but if it ran in a straight line its descent would be ten feet to the mile, and, as its course through the lava beds is generally direct, it can hardly be less than seven or eight feet, making allowance for its meanderings and the falls it passes over. Of these there are several, the greatest being the Shoshone Falls which are 212 feet high.

It is also significant that after its junction with the Boisé river it bends abruptly and runs due north for about 250 miles, leaving

the open country, which stretches westward through southern Idaho and Oregon to the base of the Cascade mountains, to make its way through the more mountainous region at the east base of the Blue mountains around which it flows. I know of no scientific explorations of this portion of the Snake valley, and the Oregon Short Line Railroad avoids it by crossing the Blue mountains, but the accounts of earlier explorers represent the mountain ridges as coming close to the river, and the latter as running through precipitous cañons deeper and more inaccessible than those of the lava plains of the Upper Snake valley. It seems probable that the cutting down of some barrier in this northern course—very likely as you suggest some lava flow that stretched across its valley—would account for its present relatively rapid slope.

The so-called placer bars which are found along its present course, often considerably higher than the present stream, not only in this region, but at various points above, also point to a recent rapid deepening of its bed. They carry gold in an extremely fine state of division and their material is generally much finer than the ordinary placer gravel, containing but few pebbles and these not entirely of quartz but sometimes of slate. They have evidently been brought from the mountains to the eastward at a much higher stage of the river, where its stream was longer and more rapid than at present.

The Nampa beds are, however, older than these gold-bearing gravels and probably older than the ancient gravels of the Upper Boisé basin at the southwest base of the Sawtooth mountains, which Mr. Becker, in his report on precious metals for the tenth census, compares with the deep gravels of California, from the fossil plants which they contain, from their great depth of 250 feet, and because they are said to be capped by basalt flows. I did not visit this basin but assume that the gravels are younger than the Nampa beds because of the higher levels which they occupy. I must confess that at present I see no evidence which would decide whether the Nampa beds are late Tertiary or early Quaternary except that furnished by the drill hole, which if authentic would be in favor of the latter. To the west of this region in southern Oregon, and along the Deschutes and John Day valleys at the east base of the Cascades, both Pliocene and Quaternary deposits are found. The latter in the Harney lake and Christmas lake basins are at a much higher level

than these being 500 to 1000 feet above the lava plains of the Snake river.

The fact that basaltic lava flows cover these beds is not decisive for either age. In the valleys of eastern Idaho, whence come some of the tributaries of the Snake, basaltic lavas both of Tertiary and of Quaternary age occur. Some of the latter fill present valley bottoms, extending up a short distance into the mouths of side cañons in the adjoining ridges. These flows have had some influence upon the direction of the present drainage, and it seems probable that before their eruption the Bear river flowed through the Portneuf valley into the Snake river, instead of into Salt Lake as it does now.

Gilbert has shown that Lake Bonneville, the quaternary tenant of the Salt Lake valleys, once overflowed into the Snake river, but whether this overflow was contemporaneous with the existence of the lake in which the Nampa beds were deposited, or accompanied the freshets which brought down the Snake river gold-bearing gravels, only a systematic study of the whole Snake river region can finally determine. Such a study ought to establish the time relations of the Bonneville and Nampa beds, and a still more definite determination of the age of the latter might be afforded by a careful study of the cañon of the Snake river below Shoshone Falls, and by a tracing of the upper limits of the lake in which the Nampa beds were deposited, and the relation of the Nampa beds to the last basaltic overflow of the Snake river plains. In a visit to the Shoshone Falls, in 1868, Mr. Clarence King found that the river above the falls runs in a cañon about four hundred feet deep cut in the upper sheet of basalt which covers the present surface of these plains, but that the cañon below the falls discloses an underlying mass of trachyte or andesite, which is probably of much earlier date. If, as seems not improbable, the basalt flows which cover the Nampa beds in the Boisé region were contemporaneous with those which cover the Snake plains in the vicinity of Shoshone Falls, at some point in the cañon of the Snake river these beds will be found resting on the underlying trachyte or andesite body, and separating it from the overlying basalt flow. It will then be proved that the cutting of the cañon of the Snake river below the surface of the basalt flows has been accomplished since the drainage of the Nampa lake, and it will only remain to estimate the time required

for the cutting of the present cañon of the Snake river through these lava flows, by the rate of recession of the various falls.

While I am, as you see, unable to give any definite estimate of the age of the beds from which the image is supposed to have been derived, I regard them as probably of far greater antiquity than any deposits in which human implements have hitherto been discovered. If, as I am now inclined to think, they antedate the cutting of the present cañon of the Snake river through the great lava plains, their antiquity at once becomes very great, as is shown by a comparison of the conditions which prevail there with those of the Niagara river, whose rate of recession has been so closely determined. The gorge of the Niagara has been cut through limestone and shale for seven miles to a depth of not over three hundred feet. The Snake river from its entrance into the lava fields at American Falls to Shoshone Falls, a distance of one hundred to one hundred and twenty miles, has cut a gorge in hard basalt from seventy to four hundred feet deep, and below Shoshone Falls, for an unknown distance, a gorge six hundred feet deep in similar material.

In the present state of our knowledge I find it difficult to institute any comparison whatever between these deposits and the gold-bearing gravels underlying the lava flows of California. Comparison between so widely separated regions are hypothetical, unless based on such an intimate knowledge of the geological structure of the intermediate region as can hardly be arrived at in the present generation. That instituted by Mr. Becker with the gravels of the Upper Boisé basin has a slight basis of probability if his premises are reliable, but the connection between these and the Nampa beds remains yet to be determined.

Regretting that I am not able to give a more satisfactory answer to your question, I am

Very sincerely yours,

S. F. Emmons.

In reply to a letter requesting through Mr. Kurtz a statement from Mr. Duffes, and making other inquiries, I received the following:

Nampa, Idaho Ter., November 7, 1889.

Prof. G. F. Wright.

Dear Sir:

Yours of Nov. 2, just received. I enclose letter from Mr. Duffes as requested.

When the head of the image was broken off I took my knife and cut into it between the shoulders in order to stick the head on again.

The head was not touched at all with the knife, but head and face are just as they were when taken from the sand.

I shall be very glad of the half dozen photographs you speak of sending, and any further information I can give will be given with pleasure.

Very truly yours,

M. A. KURTZ.

Nampa, Idaho, Nov. 7, 1889.

M. A. KURTZ, ESQ.

DEAR SIR:

In reply to your inquiry of this date in regard to the facts as regards the finding of the "Baby image" in the Nampa Artesian well, I beg to state the following:

I was present at the well along with yourself and saw you pick it out of the sand as it was discharged from the sand pump.

There were no others present except two men attending the engine and sand pump. And they could not by any means get it into the place where found, and were just as much astonished as ourselves at seeing the find. These are the facts of the case, to which I hereby certify, trusting this will thoroughly quiet all doubts.

I am yours truly,

ALEX. DUFFES.

It having been suggested that the image might have been inserted in the pump during the night, Mr. Kurtz wrote me again in answer to inquiries as follows:

Nampa, Idaho Ter., Nov. 18, 1889.

PROF. G. FREDERICK WRIGHT.

DEAR SIR:

Your favor of thirteenth inst. recd. this morning. I fear I cannot answer it satisfactorily. We paid no attention to the different strata more than to make a note of them, and all was dumped on one pile. Much of the dirt was hauled away in wagons, and the school children made it a play ground for some time so it is impossible to comply with your request.

All the specimens I send you to-day came out of the well ex-

cept the lava rock which came from a well they are now blasting some three blocks from the artesian well and must be of the same character.

You will readily understand that with the heavy bit we used, ours came out of the well only in black powder and none of it was saved, neither was the vegetable soil, but was poured out with the rest. It impregnated the water so that it was of a stringy nature, very dark or deep brownish color. The package of sand marked from the bottom of the well may or may not be from that particular place, but I selected it from what I think came up last. I cannot tell from what particular place in the well the clay and other sand package came.

In order to handle the pipes we dug a regular well, about twenty-five feet deep. The coarse gravel and hard pan are out of that portion of the well and from under the surface from six to twenty feet.

The pieces of clay I had to pick up from the sand, and you understand it has all been exposed to the weather from three months to one year.

The person who suggested to you that it might have been put in the sand pump never saw one or he would know that one descent of the jars would have ground it into powder.

I found the image between eleven and twelve o'clock in the morning. I had handled almost every pumpful of sand for several days, as the driller expected to strike sandstone at any moment.

I was sent here three years ago by P. P. Shelby, then assistant general manager of the Union Pacific R. R. to investigate the country. I did so. He then employed me to go east and deliver a series of lectures on Idaho in Pennsylvania and New York which I did. I had parties near here at that time watch this point, and when the Idaho Central R.R. was located here I came on, took up 800 acres of land and own some of the town site. I am the manager and one of the owners of the artesian well, I have a letter from Mr. Adams asking me to give the image to Harvard, but have not yet decided what I shall do.

Thank you for your kindness in sending "The Independent" containing your article. If you wish to send some person here I shall take pleasure in giving him all information possible and he might find something of importance in the large pile of sand that still remains at the well.

As ever, very sincerely yours,

M. A. Kurtz.

Nampa, Nov. 30, 1889.

PROF. G. F. WRIGHT,

Oberlin, Ohio.

DEAR SIR:

Your letter of the twenty-fifth inst. at hand. We commenced work at 7 A. M. and the sand pump made a trip every six or eight minutes. Our sand pump is about eight feet in length and is worked very rapidly by steam.

The suction valve is attached to two steel rods, attached to a bent rod of steel at the top, the whole forming what is called jars. Now the valve fits and works so nicely on the inside of the pump that if you were to throw a pin in it while at rest, the quick and sudden raising of the jars would throw it out at the top, and if the image had been thrown in as you suggest, it would have bounded out at the top, in good shape. The only other possible way would have been for the helper to have put it in after he had emptied the pump, and the only result would have been that on the descent of the jars, the valve would have knocked the image into pieces. I hope you may understand what I mean.

No clay balls of any kind are found on the surface here. We went through them for a distance of twenty-five feet before getting the image and brought a great many to the surface in all sorts of shapes, many of them being cut by the driving of the pipe. Will be pleased to see you here at any time. Now is as good as any time of the year. Our winters are very mild. Please return "image," etc., as soon as convenient.

Yours truly,

M. A. KURTZ.

The following is the letter of Mr. Cumming, in reply to one of my own.

Green River, Wyoming, Dec. 2, 1889.

DEAR SIR:

Your letter of the 25th ult. has been forwarded to me here from Salt Lake City.

I appreciate the importance of weighing the evidence carefully before accepting the Nampa image as genuine, and I understand of course that a discovery of this sort is so extraordinary that one is reluctant to accept even the strongest circumstantial (indirect) evidence as conclusive.

As I was not present when the image is said to have been discovered, my own evidence is of no value whatever except as to the character and intelligence of Messrs. Kurtz and Duffes. I have known these gentlemen for some time and in the case of Mr. Kurtz for several years. They are intelligent and well-informed men of the highest character and no one of their acquaintance would hesitate for a moment to accept and believe their testimony on any question of business. In the case of the Nampa image, they would have no motive to mislead the public, even if they were willing to do so, unless they were seeking a cheap notoriety or wished to play a practical joke. From my knowledge of these gentlemen, however, I cannot believe that they would lend themselves to a fraud of any kind, even by way of jest, and I think you may safely rely upon their statements as being correct in all respects.

The only other evidence which I can furnish on the subject is wholly circumstantial and that has already been communicated to you.

In conclusion I may say that Messrs. Kurtz and Duffes exhibited the image to me at Nampa on the day after its alleged discovery and their manner and actions at that time convinced me that their statement, however incredible it might seem, was neither a joke nor a fraud.

So far as my own opinion is concerned, I am prepared to accept the image as what it purports to be, namely, as having been found at a depth of more than three hundred feet beneath the lava beds of the Snake River valley.

I remain, very respectfully yours,

G. M. Cumming.

G. Frederick Wright, D.D., LL.D.,
Oberlin, Ohio.

The only other letter of Mr. Kurtz which it is necessary to submit is dated Dec. 17, 1889.

Nampa, Idaho Ter., Dec. 17, 1889.

Prof. G. F. Wright.

Dear Sir:

In reply to yours of the thirteenth inst. would say: *First*, after we reached the depth of sixty feet we struck water and it has

remained at that distance from the top of the well, except when it was shut off for a short time as we went through the clay beds.

Second. We purchased the entire well-boring outfit new at Utica, N. Y.

Third. The engineer's name is H. Grumbling, a Pennsylvanian, who has sunk a good many oil wells in Pennsylvania. He lives here, but is now employed at Boisé City. The helper's name I do not know. He was a common laborer who had been working on an irrigating ditch. I do not know where he is now.

Fourth. The engineer is a capable man in his line. You ask if he would have been capable of making an image of this sort. He might if his attention had been called to the matter, if he had had a model and if he had known the clay from the small balls would have made such an image, and had he had some unobserved place to have made and burned it, but I think not.

The helper would not have been capable of the thought or the execution.

Fifth. My recollection is that we found the clay balls the day before we found the image. The largest I took to my home. I did the cutting on the largest one myself.

Sixth. A letter directed to H. Grumbling here or at Boisé City would reach him at any time. If I could have a few minutes' conversation with you I could explain the matter to your satisfaction; also why I cannot afford to give the image to Harvard or to any institution at present.

As ever, very truly yours,

M. A. Kurtz.

The image was in my own hands nearly three months in all, so that we had ample opportunity to examine it. I placed it in the hands of my associate Albert A. Wright, professor of natural history at Oberlin and a most skilful and careful observer. I submit his report which you will perceive is perfectly unbiassed. It was also carefully examined by F. F. Jewett, professor of chemistry, and I submit their opinions.

An examination of the Nampa Image.

By Albert Allen Wright.

Professor G. F. Wright has submitted to me, for examination, the little image from Nampa, Idaho, which is said to have been

pumped up from an artesian boring. The results of my examination are given herewith.

I must premise that in order to make the report as definite as is desirable, it will be necessary to mention some details which cannot be fully appreciated without an inspection of the objects discussed.

DIMENSIONS.

The total height of the image is just one and one-half inches (1.5)=48 mm. A few other measurements are:

Width at the shoulders . . .	0.54′ (in.)	= 14 mm.
Width at the hips	0.43′	= 11 mm.
Thickness of body, breast to back .	0.25′	= 6.5 mm.
Thickness at hips	0.35′	= 9 mm.
Width of head	0.30′	= 7.5 mm.

SHAPE, FEATURES, ETC.

It represents a human body; and from the slight depression between the breasts it is evident that a female figure is intended.

As to the quality of the modelling, it may be said that, with the exception of the head, the general proportions of the body are harmonious, showing a good degree of approach to a correct model. The work upon the back side of the body is especially good, and the natural bending of the arms at the elbows, together with the easy manner in which they rest at the side of the hips, make the nearest approach to an artistic touch. It could not have been the work of any child or mere novice. The surface is not smoothed nor polished, but is, for the most part, of a rough, granular nature. The strokes of the graving tool can be easily recognized in many places, and the whole gives the impression at once, that it was moulded from clay, the work having stopped as soon as the principal parts of the body were outlined. There are no hands nor feet, and I think there never were any. The left leg is preserved in nearly its whole length, while the right leg is missing from a point above the knee. Neither of these was broken at the extremity by any recent fracture. If the short leg was ever of equal length with the other, it was broken and rounded before it came up from the well. The head is large and pushed to one side. It was never carved into any good shape. There are three rude depressions upon the face, suggesting the eye-orbits and mouth.

COLOR.

The general color of the image is a fulvous or reddish brown. The departures from this general color are in two different directions.—*First*, to a deeper reddish upon the back side of the body, and upon the left arm. Upon the top of the head also there is a distinct layer of darker rusty color, in which some grains of quartz are imbedded. *Secondly*, some parts have a blackish or smoked appearance. This is seen upon the leg, thigh and breast.

The color of the interior of the image has been revealed by accidental fractures of the neck and of the longer leg since it was taken from the well. It is a yellowish fulvous, quite uniform, and distinctly lighter than the exterior. It is precisely the color now presented by the face of the image; from which fact I am confident that the face has been recarved recently, after the image was first finished, and before it came into my hands for examination. I scarcely need to say that while the object was in my possession, no reagent nor test nor tool was applied to it, which could in the slightest degree affect its color or external appearance.

The interior color of the short leg differs from that of the body, in being of a distinct dark gray, without any of the fulvous element. I think I shall be able to account for this difference of color in a later part of this report.

THE MATERIAL: WAS IT RIGID, OR PLASTIC?

The image was moulded out of a plastic, gritty clay, and afterwards burned in a fire.

The evidence for the previous plasticity of the material is so strong, that I am confident that any who have come to a contrary opinion, as, for example, that it was carved from a tufaceous or pumiceous rock would, if they could have the ample opportunities for examination which have been accorded to me, recall that conclusion. A detailed study of the surface will show that the graving tool sometimes took long, sweeping strokes, leaving a plane surface with sharply defined margins. Moreover, the direction of the strokes can, in some instances, be determined by the transverse, minute crevasses left in the substance under the tool, such as one sees when a glazier spreads his putty. Thus, the strokes in the crevice between the right arm and the body, on the front side, were downward, while those in the corresponding crevice on the left side were upward.

Again, we know that whenever a pointed stylus or tool is drawn along a plastic surface, so as to plow a furrow in that surface, the material upon each side of the furrow will be thrown up into an elevated ridge, and if the substance is gritty, the ridges will have a ragged summit. There are many such ragged-topped ridges along the margins of the strokes upon this image, especially in the protected hollows, where some of them are as sharp and distinct as if freshly made.

And still again, there are certain excavated, V-shaped troughs or grooves between the members of the body, as between the arms and the trunk, which had once been moulded into final form; but into these excavations there were afterwards pushed out, by maladroit strokes of the tool, ridges of the material which partially roofed over the cavity, yet leaving the original excavation underneath plainly discernible. To specify, this may be seen in the grooves behind the right arm, both forearm and upper-arm, and in the space between the lower limbs. It is a disposition of material that could not have been left in a brittle substance. Finally, there are some cuts left by the tool, so sharp and clean and deep, as to demonstrate that the material was not brittle, but which at the same time give us a record of the exact dimensions of the tool that was used. At the junction of the limbs there is one such stroke, which left a gash only one seventy-fifth of an inch wide, by measurement, though many times as deep and long. The margins are perfectly sharp and parallel and smooth, and show that some tool, like a knife blade or piece of tin, must have been used. The crevice will just admit a thin knife blade.

I regard the external markings, therefore, as sufficient to show the original plasticity of the material, but it will be seen that all the subsequent steps of the examination also confirm this theory.

MICROSCOPIC EXAMINATION OF THE MATERIAL.

The unaided eye readily distinguishes two elements in the material of the image. The first is the fine-grained, homogeneous, fulvous powder that constitutes the principal part of the whole. By a little boring with a knife blade at the fracture of the leg, this material was found to break down with greater facility than would be experienced with an ordinary red brick. The tenacity of the material is not great. The powder was too fine to be called sand and yet not so fine as the elements of porcelain clay. When moist-

ened, the particles adhered together with much less tenacity than is seen in the common, sticky drift clays, yet there was enough adhesion to form a plastic mass.

The second element in the material consisted of grains of quartz and possibly of other minerals, scattered at random through the finer substance. In size, these will measure from one-sixteenth to one thirty-second of an inch and smaller. They are sufficiently numerous to make the whole material gritty and to account for the roughness of some of the tool-work. Many of these come just to the surface of the body, as, for example, three on the back between the shoulders, three or four on the inner side of the left leg, and one on the front of the arm at the right shoulder. Upon the right hip is one that projects a little, not having been sufficiently pressed down by the moulding tool. One was taken from the interior of the leg, at a point of fracture, and the rough summit of the head is liberally supplied with them. The loose grains which are lodged in the crevice between the right arm and the body, and which are shown in the photographs and engravings of the image, are of the same sort. These grains were, in my opinion, not accretions from without, cemented there by the slow deposit of ferric oxide, but were constituents of the original material, thrown out by the point of the graving tool and left where they are, either by accident or design.

The material of the image was so friable that it would have been well nigh impossible to make a thin section for microscopic examination. It was not attempted, and it would have been of no value unless the image were carved from a piece of rock. Samples of the finer material of the image, however, in the form of powder, were mounted in balsam and submitted to optical examination. The object in view was to obtain a clew as to the source whence the material of the image was derived. The microscopical examination was not made thoroughly exhaustive because, before it was finished, other satisfactory evidence on this point came in. Still, the principal elements of the powder were determined, as follows:

First, and most prominent, constituting more than half of the material, *quartz*, in brilliant, sharp-angled fragments. The colors upon revolution between crossed nicols were frequently from brilliant blue to yellow, but for the most part they brightened only into a cold gray. Quite a number of the larger grains were sketched in outline with a camera and measured, the average mean diame-

ter being three one-thousandths of an inch (0.003 inch) = 76.2 μ (mikrons).

Second, red-brown scales of biotite, smaller than the quartz scales, averaging about two one-thousandths of an inch (0.0019 inch) = 48.26 μ (mikrons) in diameter. The hexagonal angles are frequently distinct, though usually the margins are ragged. Although the flakes must all have been basal cleavages, nearly half of them showed some alterations between crossed nicols.

Third. Small and large colorless flakes, always appearing isotrope, some of them, possibly, of a volcanic, glassy nature, others showing a few sharp angles of 60 degrees and 120 degrees, doubtless muscovite.

Fourth. Opaque, red-brown flakes and aggregations of ferric oxide, showing gradations from a powdery ochre up towards scales of biotite, from which they were undoubtedly derived.

Fifth. Very fine-grained material, having no distinct optical characters. In the dry powder it forms aggregations of a whitish color. It is, doubtless, kaolinic and forms the cement for the whole image.

Nothing was detected which seemed to be of the nature of vegetable tissue.

The above analysis suggests at once, in fact, practically proves, that the material, as a whole, consists of the finer elements resulting from the breaking up of granitoid rocks.

SOURCE OF THE MATERIAL.

Upon application to the parties who discovered the image, samples were obtained: (1) of the surface soil in the vicinity of the well; (2) of the sand from various depths in the well, taken, however, from the dump heap where it had lain for three months; (3) of the lava rock, taken from an adjacent well; and (4) of clay balls which were said to have been first encountered at twenty feet above the depth at which the image was found.

All of these have been examined to see if any of them could have furnished the material for the image. The surface soil will not make a clay that can be worked, and when burnt it falls to powder. The sand and the lava are also out of the question. It should be remarked, however, that the sand is a clean, whitish-yellow sand, containing some mica scales and gravel, and is also of granitoid origin. The clay balls fit the case precisely, and I am

satisfied that it was one of these, or at any rate clay of identical composition, from which the image was moulded. Under the microscope they show precisely the same elements that were detected in the image, and they form, when moistened, a plastic material that can be moulded.

The clay-balls are in themselves of much interest as a geological phenomenon. The interior of each ball is very different from the exterior. The interior is nearly white and very fine-grained, while the exterior is covered with coarse sand embedded in rusty-brown material. The largest specimen, which was four inches in diameter, exhibits upon cross section a series of concentric rusty rings, from one-eighth to one-sixteenth of an inch apart, thus showing that it is composed of a series of concentric layers and was formed upon the concretionary principle, like the nodular iron ore of the coal measures. The interior of the balls furnished the finer elements of the image, while the coarse quartz grains came from the exterior, the two being mixed together in the hands of the artisan.

The material of the clay balls, when subjected to heat, was found to undergo rather complicated changes of color. Moderate heat blackens the exterior without greatly changing the interior, as if organic matter were present. Stronger heat develops the reddish or fulvous color, both internally and externally. Yet, unless the strongest heat is at the same time strongly oxidizing, the result will be a dark gray. If the flame of a Bunsen gas burner is allowed to play upon a piece, the portion that was in the centre of the flame will be left gray, while only the outer portions will be reddened. It is thus very difficult to produce a uniform reddish color over the entire surface of a moulded specimen. These facts will, I think, account for the different shades of color observable upon the surface of the Nampa image, to which previous allusion has been made. The dark gray at the end of the shorter leg is due to a lack of oxygen at the time of burning, and the distribution of black and red was due to the inequalities of the flame.

A DUPLICATE OF THE IMAGE.

Having proceeded thus far with the investigation, it was natural to go a step farther and see if the image could not be reproduced in all its essential features. A clay-ball with a liberal coating of sand was selected, crushed together in a mortar, moistened into a putty and moulded with a knife-blade into some similarity of form

to the original. In the process of moulding it was discovered that all the exposed parts of the body inevitably became smoothed and rounded by the touch of the fingers in holding it, so that only the hollows and crevices retained the marks of the tool in all their sharpness. It was also seen that the gritty material had considerable tendency to adhere to the graving tool, so that loose sand grains and rough ridges were left along the strokes.

The burning of the image was accomplished in a porcelain dish, heated from beneath by a Bunsen burner, so that the flame did not come in contact with the material. The gradual steps of its evolution, through Ethiopian blackness toward Indian red, were observed, but the process ceased before a suitable redness was produced. The object was then supported upon a wire gauze and the flame allowed to play through the gauze, directly upon it. Some improvement was obtained in this manner. But finally, certain parts, which retained too much blackness, were brightened up by the oxidizing flame of a mouth blowpipe and the result is what may be seen in the object as it now appears.

This is the only attempt that was made, and I may say that the success of the imitation was far beyond my anticipations. The general tone and variations of color in the two are exceedingly similar. Whether viewed by the unaided eye, or examined with a Coddington lens, nearly every surface feature of the one is reproduced in the other. There is a larger supply of quartz and mica grains in the duplicate than in the original, but this depends, of course, upon an arbitrary selection of materials at the beginning. The interior color of the two is precisely the same and the tenacity of the material is also identical. The duplicate has suffered the accident of having its head broken off, so that an opportunity was afforded of comparing the two side by side. The comparison has been made by a large number of persons, professors in Oberlin College, and others.

There is only one point, which seems of any importance, in which the duplicate fails to reproduce the original, and that is a superior tint of redness at one or two points upon the surface of the original, notably upon the back, and at the left hand. This raises the question whether the extremer tint in the original may not be due to a slow deposit of iron rust from external, or even internal sources, and thus furnish evidence of its antiquity. To this it may be replied that the extremer color can be obtained by

using a few drops of hydrochloric acid upon the clay, and the reheating. Even deeper tints than are seen in the original can thus be secured. This process has not been tried upon the duplicate image, but has been upon other portions of the same material, not, however, until after the original had been returned to its owner, so that exact comparisons have been, as yet, impossible, or, it may be said that the extreme color may be due to a different selection of materials, including more iron oxide, for example, or, to some accidental feature in the process of burning. In none of my own experiments, however, has that apparent tint been obtained, excepting by the use of an acid.

IS THE IMAGE AN ANCIENT ONE?

Without entering at all upon the other lines of evidence which bear upon the theory of the antiquity of the image, I have only to state in conclusion, that I have not been able to find, in this examination, anything that is satisfactory in confirmation of such a theory. If the image is really older than the three hundred feet of sedimentary and volcanic deposits under which it was buried, its age must at least be many hundreds, and probably many thousands of years. While it would be difficult, even if all the chemical conditions were known, to tell beforehand what the effects of such protracted burial might be, we should still expect that some tangible evidence would appear. As to the proper interpretation of the characters which the image does present, we might well be uncertain, so long as there was no standard with which to compare it. But when we find that it is possible in a few hours to produce a duplicate which exhibits all the external and internal characters of the original, there is nothing left in the image itself to sustain the theory of its antiquity. Whoever compares the two will see that the tool marks are as distinct and fresh in the original as in the duplicate. He will see the same corroded surface on the duplicate as on the original. The interior tenacity, composition and color are the same in both. The variations in the external color have been fully set forth.

While therefore it would be a great pleasure to be able to confirm the evidence of its antiquity brought forward from other sources by my friend and co-laborer Professor G. F. Wright, I am still compelled to say that I can find no satisfactory marks of the tooth of time upon it.

Oberlin, O., Dec. 25, 1889.

PROF. G. F. WRIGHT.

DEAR SIR:

A careful examination of the Nampa image, and experiments made upon clay taken from the same well, lead me to the conclusion that the image must be of considerable age. I cannot account for the accumulation of the oxide of iron upon the grains of sand, lying between the body of the image and its arms, except by supposing it to have been the result of the slow decomposition of substances containing iron, in its immediate vicinity. Although I have been able to reproduce the color of this oxide tolerably well by heating clay coated with a solution of iron chloride, yet I have not been able to reproduce it by simply heating clay to different degrees of temperature.

Yours truly,

F. F. JEWETT.

In conclusion I would say that the direct evidence in the case seems to be of as high order as could well be obtained. The character of Mr. Kurtz and of Mr. Duffes is amply vouched for, not only by Mr. Cumming, but by other parties whom I have met who personally know them. The whole appearance of Mr. Kurtz's letters show him to be a genuine man. There was no sensational publication in the papers, nor has there been any suggestion of mercenary motives. There were no archæologists or scientific men on the ground to be humbugged. Apparently the image would have disappeared and dropped out of notice but for the fortunate chance which brought it to the attention of Mr. Adams, when his own mind was interested in that class of subjects. The evidence is most direct as to the impossibility of the image's having fallen into the well from the surface, or of its having been put in by design.

Professor A. A. Wright's examination, it is true, is not of itself conclusive as to age, but there is nothing in it bearing indubitably against its age; while the similarity of the material composing the image and that composing the clay balls, seem to me strongly confirmatory of the genuineness. I also attach much weight to Professor Jewett's opinion as to the character of the iron oxide upon the original image. It seems in the highest degree improbable that anyone should have manufactured such an object on the spot, and have been so successful in meeting all the conditions present. I

am therefore prepared to accept without further question the genuineness of the image, and shall look for further confirmation as time elapses.

Note.—Since the meeting of the society a letter has been received from the engineer, H. B. Grumbley (the only other person from whom information could be obtained), who says, "I was present at the finding of the image. Circumstances were such that there could have been no mistake. I don't think there was any chance for the helper to have placed it in the sand, nor do I think he was capable of so doing."

President Putnam spoke of the evidences of the age of the image as shown by the deposit of oxide of iron on parts of the image, particularly the cementing of quartz grains by the iron under the right arm, which he considered as extraneous and not as particles pushed out in carving that part.

Prof. E. S. Morse made some general remarks on the antiquity of man.

Mr. S. H. Scudder spoke of errors liable to occur in mistaking natural for artificial forms and exhibited a specimen of rock formation from the Silurian which had a remarkable likeness to a fossil beetle.

Prof. H. W. Haynes said that he regarded the Nampa image as a most important evidence of the great antiquity of man in America. He presented the following additional documentary evidence:

Boston, November 6, 1889.

My dear Mr. Haynes:—Professor Wright sends me a note saying that the first paper will be read on the subject of the Kurtz image before the Boston Society of Natural History this evening. He wishes something said in relation to the opportunities enjoyed by Mr. Cumming to know the facts both about the discovery and about the man who made it.

I believe Mr. Cumming has been personally communicated with on this subject. I can only say of Mr. Cumming that I should regard his evidence in this matter as entitled to as much consideration as the evidence of any scientific man would be. He was on the spot the day the "find" was made, and his estimate of it would in my mind carry very great weight. He is, as you are aware, not

only a graduate of the college, but he was educated as a lawyer, passed several years of study in Europe, and is a man of the highest personal character, accustomed to weigh evidence, and not likely to be deceived.

I remain, etc.,

CHARLES F. ADAMS.

Adams Building, 23 *Court Street.*

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